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OCTOPOTEUTHIS SICULA (RÜPPELL, 1844) AND *BRACHIOTEUTHIS RIISEI* (STEENSTRUP, 1882) (CEPHALOPODA: TEUTHOIDEA) FROM THE NORTH-WESTERN IONIAN SEA

Key Words: Cephalopoda, new records, Ionian Sea, Mediterranean Sea

Abstract

The occurrence of two cephalopod species new to the north-western Ionian Sea is recorded in this note. One female *Octopoteuthis sicula* and three male *Brachioteuthis riisei* were collected in June 1994 during a bottom trawl survey. Both species were caught during daylight hours at a depths between 540 and 615 m. The finding of *Octopoteuthis sicula* is the first in the central Mediterranean Sea.

Riassunto

Durante una campagna sperimentale di pesca a strascico realizzata a Giugno 1994 nel Mar Jonio nord-occidentale sono stati rinvenuti una femmina di *Octopoteuthis sicula* e tre maschi di *Brachioteuthis riisei*. Gli esemplari sono stati catturati durante le ore di luce su fondi mesobatiali, tra 540 e 615 m di profondità. L'esemplare *Octopoteuthis sicula* misurava 95 mm di lunghezza dorsale mantello e presentava la gonade immatura. I tre individui della specie *Brachioteuthis riisei* avevano una lunghezza del mantello dorsale pari a 58, 60 e 52 mm. Soltanto il primo di questi presentava spermatofore mature nella gonade. Per *Octopoteuthis sicula* si tratta del primo rinvenimento nel Mar Jonio e quindi nel Mediterraneo centrale mentre per *Brachioteuthis riisei* della prima segnalazione nell'area investigata (Jonio nord-occidentale). Anche se le indagini finora effettuate lungo la colonna d'acqua sono piuttosto limitate, le specie segnalate in questa nota sembrano essere piuttosto rare rispetto ad altri cefalopodi pelagici, per esempio quelli del genere *Histioteuthis*, più frequentemente raccolti nell'area con la rete a strascico.

Introduction

Octopoteuthis sicula (Rüppell, 1844) (Teuthoidea: Octopoteuthidae) and *Brachioteuthis riisei* (Steenstrup, 1882) (Teuthoidea: Brachioteuthidae) are mesopelagic oegopsid squids widespread in all oceans (CLARKE, 1966; MANGOLD & PORTMANN, 1989). In the Mediterranean, they have been recorded in both western and eastern basins (TORCHIO, 1968; RUBY & KNUDSEN, 1972; MANGOLD & BOLETZKY, 1988). Only the presence of *Brachioteuthis riisei* is recognized in the Adriatic Sea (BELLO, 1990, in press).

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Brachioteuthis riisei is also the only of the two species recorded in the south-eastern side of the Ionian Sea (DEGNER, 1925) whereas the presence of *Octopoteuthis sicula* from this region of the Mediterranean has not yet been documented. Neither species has been listed in the cephalopod fauna of the Gulf of Taranto (north-western Ionian Sea) (BELLO, 1987). Their occurrence in the north-western Ionian Sea is reported in this note.

Materials and Methods

A bottom trawl survey, funded by EC, was carried out during June 1994 in the north-western Ionian Sea, between Cape Otranto (Lecce) and Cape Passero (Siracusa), from 10 m to 800 m in depth.

A professional vessel equipped with nylon otter trawl net, with stretched mesh of 20 mm in the codend, was used. The horizontal and vertical net opening, measured by means of SCANMAR sonar system and depending on various factors (depth, warp length, towing speed, etc.), ranged from 12.46 to 23.89 m and from 2.89 to 3.69 m respectively (FIORENTINI *et al.*, 1993). The vessel speed, measured using GPS, was maintained at 2.5 - 3.0 knots.

The sampling design adopted was random. A total of 73 hauls were carried out during daylight.

Diagnosis of the species was made on the basis of the characteristics described by NAEF (1923). The sites where the specimens were collected are shown in Fig. 1.

Results

One specimen of *Octopoteuthis sicula* and three of *Brachioteuthis riisei* were caught.

Octopoteuthis sicula was fished off Riace (Calabrian coast: Lat. 38°18'38" N; Long. 16°37'27" E) at a depth of 615 m.

Although the specimen was in bad condition, with some arms cut off, it showed the peculiarities of the species: short gelatinous body; conical shape of the mantle tapering to a terminal tip; the length of the fins was about 88% of the mantle length. The arms presented a terminal photophore and two rows of hooks, covered by a fleshy hood; only the arms tips preserved small biserial suckers; the tentacles, lost during development (NAEF, 1923), were absent in this adult form.

The specimen was an immature female with nidamental glands 15 mm in length.

The weight and morphometric data taken from the preserved specimen, were as follows:

Weight (g)	TL (mm)	DML (mm)	VML (mm)	Fin length (mm)	Fin width (mm)
66.4	215	95	92	84	111

Three specimens of *Brachiotethis riisei* were fished in two different hauls

carried out in the Gulf of Taranto; two specimens off Cape S. Vito at 540 m (Lat. 40°19'32" N; Long. 17°07'02" E) and one off Leporano at 590 m (Lat. 40°18'22" N; Long. 17°08'52" E).

The specimens had all the diagnostic features of the genus *Brachioteuthis*: narrow elongated mantle with scattered chromatophores; short heart-shaped fins, typical funnel showing long and distinct abductors; long tentacles with small suckers on the club; arms of different length with formula 2,3,4,1 (PFEFFER, 1912; NAEF, 1923).

The three individuals had the characteristics below:

Weight (g)	TL without tent. (mm)	DML (mm)	VML (mm)	Fin length (mm)	Fin width (mm)	Sex	Maturity stage
6.8	115	58	53	24	28	M	mature
7.8	126	60	55	26	32	M	maturing
5.8	110	52	47	22	24	M	maturing

In the mature male 20 ripe spermatophores, measuring 6-8 mm, were counted. In the maturing specimens a few incompletely formed spermatophores were observed.

Discussion

The present finding of *Octopoteuthis sicula* is the first from the Ionian Sea; furthermore the species was never found in the adjacent Adriatic Sea (BELLO, 1990). Even though investigation of the water column was rather limited, the very few records of this species in the Mediterranean, stress its rarity in respect to other pelagic cephalopods, e. g. *Histioteuthis spp.*, which are more frequently collected through bottom trawling in the north-western Ionian Sea (BELLO,1985; TURSÌ & D'ONGHIA, 1992; TURSÌ *et al.*,1994).

The only records in the middle-eastern Mediterranean go back to those made by PFEFFER (1912) and DEGNER (1925). These were related to juvenile specimens smaller than 35 mm mantle length. Recently, JEREB & RAGONESE (1990) have provided indications of two specimens of *Octopoteuthis sicula* found at 630 and 680 m in the Sicilian Channel. These authors only report the mantle size of the largest as 218 mm.

The finding of *Brachioteuthis riisei* represents the first record in the north-western Ionian Sea. DEGNER (1925) found the species in the south-eastern side of this basin during the "Thor" expedition. The previous finding in the Mediterranean of *B. riisei* were mainly represented by juveniles. In particular, the oldest records from Messina (Sicily), reported by PFEFFER (1912), regarded specimens smaller than 32 mm mantle length; the largest specimen found from the eastern Mediterranean basin had a mantle length of 34 mm (DEGNER, 1925). BERDAR & CAVALLARO (1975) collected a stranded specimen of *B. riisei* in the Strait of Messina which measured 27 mm of DML. Two specimens of

this species caught by means Marinovitch trawl in the western Mediterranean measured 43 and 58 mm mantle length (MANGOLD-WIRZ, 1973). This authoress did not report the size of the eleven specimens collected through IKMT. Recently a beak of an adult specimen of *B. riisei* has been found in the stomach contents of *Galeus melastomus* from the Adriatic Sea (BELLO, in press). The size of this beak gives an estimated mantle length of 71 mm.

Considering the pelagic habits of the species, in our opinion the wide horizontal and vertical opening of the net used during this trawl survey favoured the capture of these specimens. In fact, although seasonal trawl surveys have long been carried out in the area using commercial net, with a vertical opening of less than 0.95 m, the species were never found before. Moreover, during this survey the cephalopod composition of the catch was mainly made up of pelagic species in contrast to those found in the previous surveys carried out using commercial net (unpublished data). In this respect ROPER (1977) pointed out the fact that various pelagic nets sample cephalopod differently, not only in terms of species composition and numbers but also with regard to the size of the specimens.

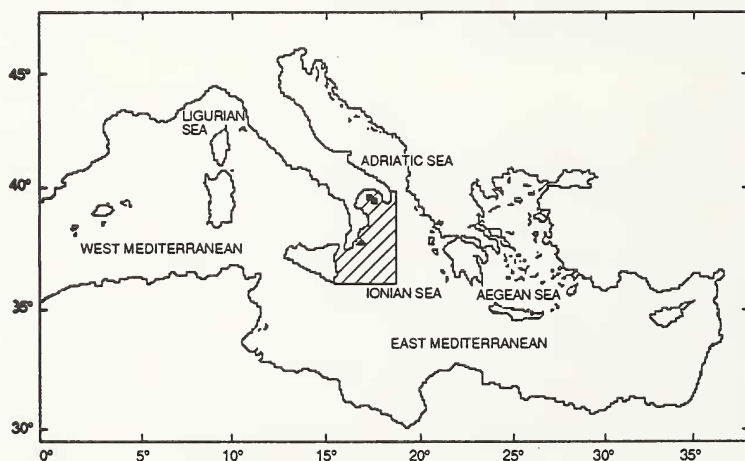


Fig. 1 - Area investigated (shaded) during June 1995 in the Ionian Sea, with indication of the sites where *Octopoteuthis sicula* (▲) and *Brachiooteuthis riisei* (■) were found.

As regards the vertical distribution of *O. sicula* and *B. riisei* the information reported in the literature, both for early juvenile stages and adults, indicate a wide bathymetric distribution of the species (CLARKE, 1966; MANGOLD-WIRZ, 1973; ROPER, 1977) suggesting ontogenetic ascent and diel vertical migration (LU & CLARKE, 1975; ROPER & YOUNG, 1975).

Although the information here presented is somewhat scanty the finding

of *O. sicula* and *B. riisei* on bathyal grounds in the north-western Ionian Sea is in agreement with PEARCY (1965) who did not find *O. sicula* during 72 tows made at 0-200 m but only caught some specimens by towing at depths of 0-500 m and 0-1000 m. Furthermore, the present data appear to be in agreement with ROPER & YOUNG (1975) who indicated a deeper distribution during the daytime than during the night for species of the genera *Octopoteuthis* and *Brachioteuthis*.

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